



# *Cal* OES

GOVERNOR'S OFFICE  
OF EMERGENCY SERVICES





# **Western APCO 2017**

**Presented by**

**Budge Currier**

**California 9-1-1 Emergency  
Communications Branch  
(CA 9-1-1 Branch)**

**April 13, 2017**

## **Presentation Purpose**

To provide information that will promote a fruitful discussion of how we can transition to Next Generation 9-1-1.

Address the challenges

Discuss the needs

Face the realities

Identify relevant questions

## Relevant Questions

- Why does California need Next Generation 9-1-1?
- What happens if California does nothing?
- What are the important transition considerations?
- How does State 9-1-1 ensure the PSAP is not forgotten?
- How will Next Generation 9-1-1 be procured?
- How will Next Generation 9-1-1 be funded?
- When will Next Generation 9-1-1 be implemented?
- How will Next Generation 9-1-1 change my PSAP?

# Presentation Roadmap

- Mission and structure of CalOES and 9-1-1 Branch
- 9-1-1 in California today
- Quick peek at Next Generation 9-1-1 design
- Multiple ESInet implications
- Planning challenges and Procurement options
- State and PSAP roles and governance
- System monitoring
- Implementation timeline
- PSAP Preparations



# Mission and Structure of CalOES and 9-1-1 Branch

**“To the person who does not know where he wants to go there is no favorable wind.”  
— Seneca**

## CA 9-1-1 BRANCH MISSION

To enable Public Safety Answering Points (PSAPs) to provide the fastest, most reliable, and cost-effective access to emergency services for any 9-1-1 caller in California from any communications device.

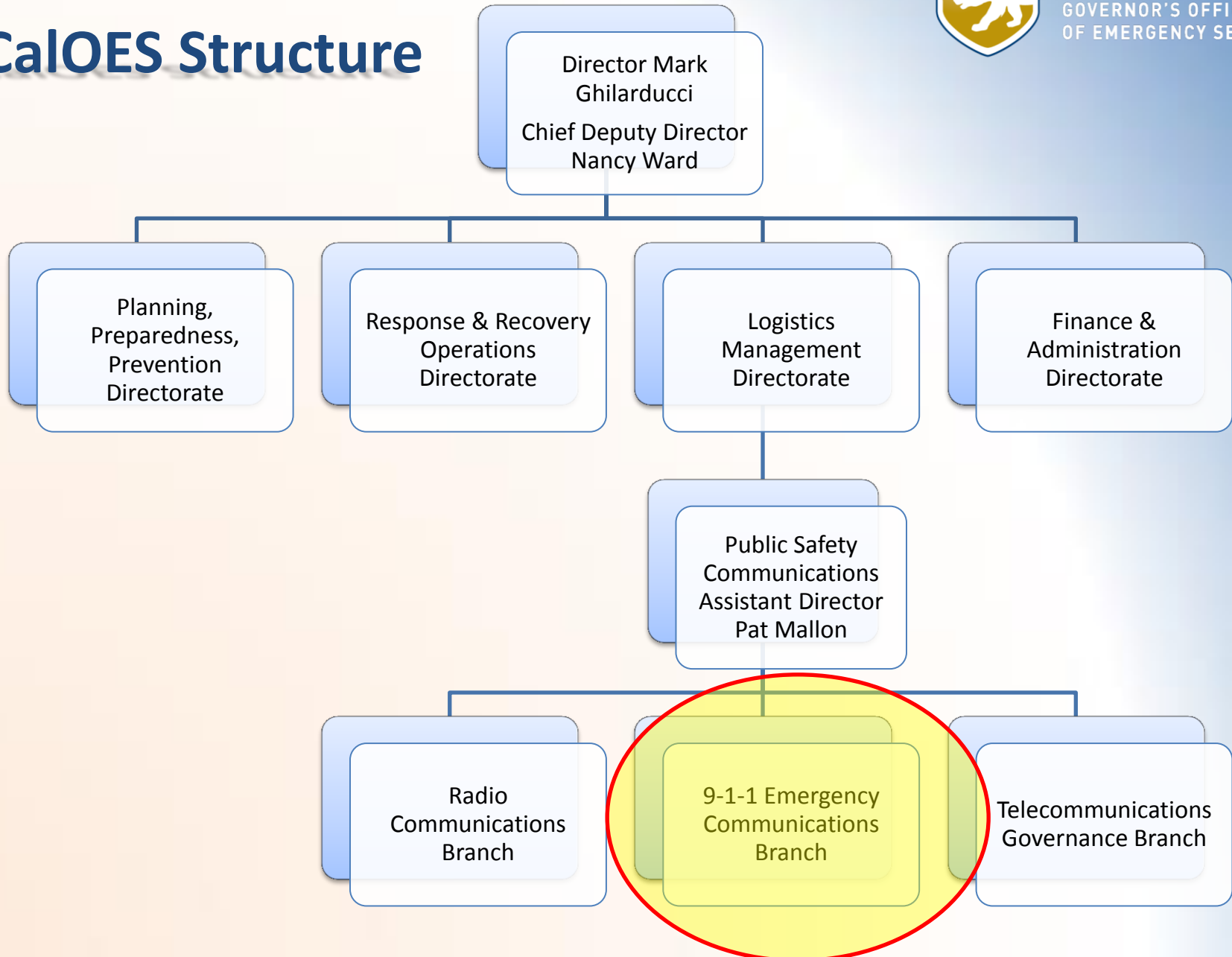
## CalOES Mission

We protect lives and property, build capabilities, and support our communities for a resilient California. We achieve our mission by serving the public through effective collaboration in preparing for, protecting against, responding to, recovering from, and mitigating the impacts of all hazards and threats.





# CalOES Structure



# CA 9-1-1 BRANCH STRUCTURE

## California 9-1-1 Emergency Communications Branch

### Mail and Delivery Address:

Public Safety Communications  
CA 9-1-1 Branch  
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Sacramento, CA 95811-0231

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Administrative Support

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\*\*\*\*\*

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\*\*\*\*\*

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17-Lake 49-Sonoma  
19-Los Angeles 56-Ventura  
23-Mendocino 97-Cal Fire (statewide)  
40-San Luis Obispo

02-Alpine 29-Nevada  
03-Amador 31-Placer  
05-Calaveras 32-Plumas  
07-Contra Costa 33-Riverside  
09-El Dorado 35-San Benito  
10-Fresno 36-San Bernardino  
14-Inyo 38-San Francisco  
18-Lassen 39-San Joaquin  
20-Madera 41-San Mateo  
21-Marin 43-Santa Clara  
22-Mariposa 44-Santa Cruz  
24-Merced 46-Sierra  
25-Modoc 55-Tuolumne  
26-Mono  
27-Monterey

01-Alameda 45-Shasta  
04-Butte 47-Siskiyou  
06-Colusa 48-Solano  
08-Del Norte 50-Stanislaus  
11-Glenn 51-Sutter  
13-Imperial 52-Tehama  
15-Kern 53-Trinity  
16-Kings 54-Tulare  
28-Napa 57-Yolo  
30-Orange 58-Yuba

### 9-1-1 TECHNOLOGY DIVISION

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Wireless & Emerging

Technologies



## 9-1-1 in California Today



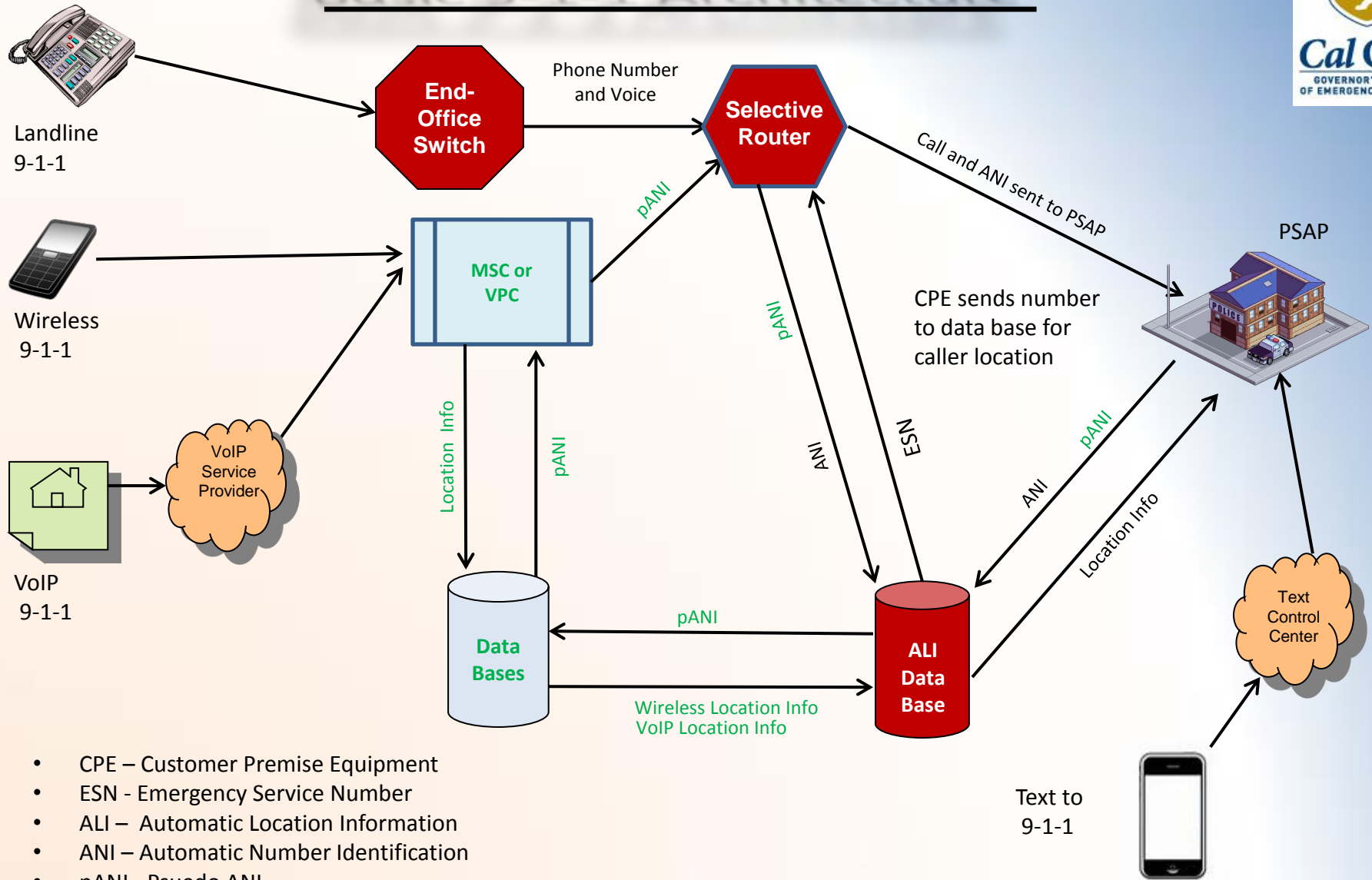
## 9-1-1 in California Today

### 2016 California 9-1-1 Call Statistics

Total 9-1-1 Calls 28,507,534

- 80% Wireless
- 16% Wireline
- 3% Voice over IP
- 1% Other to include Telematics
- ~ 5k Text Messages

# Basic 9-1-1 Architecture

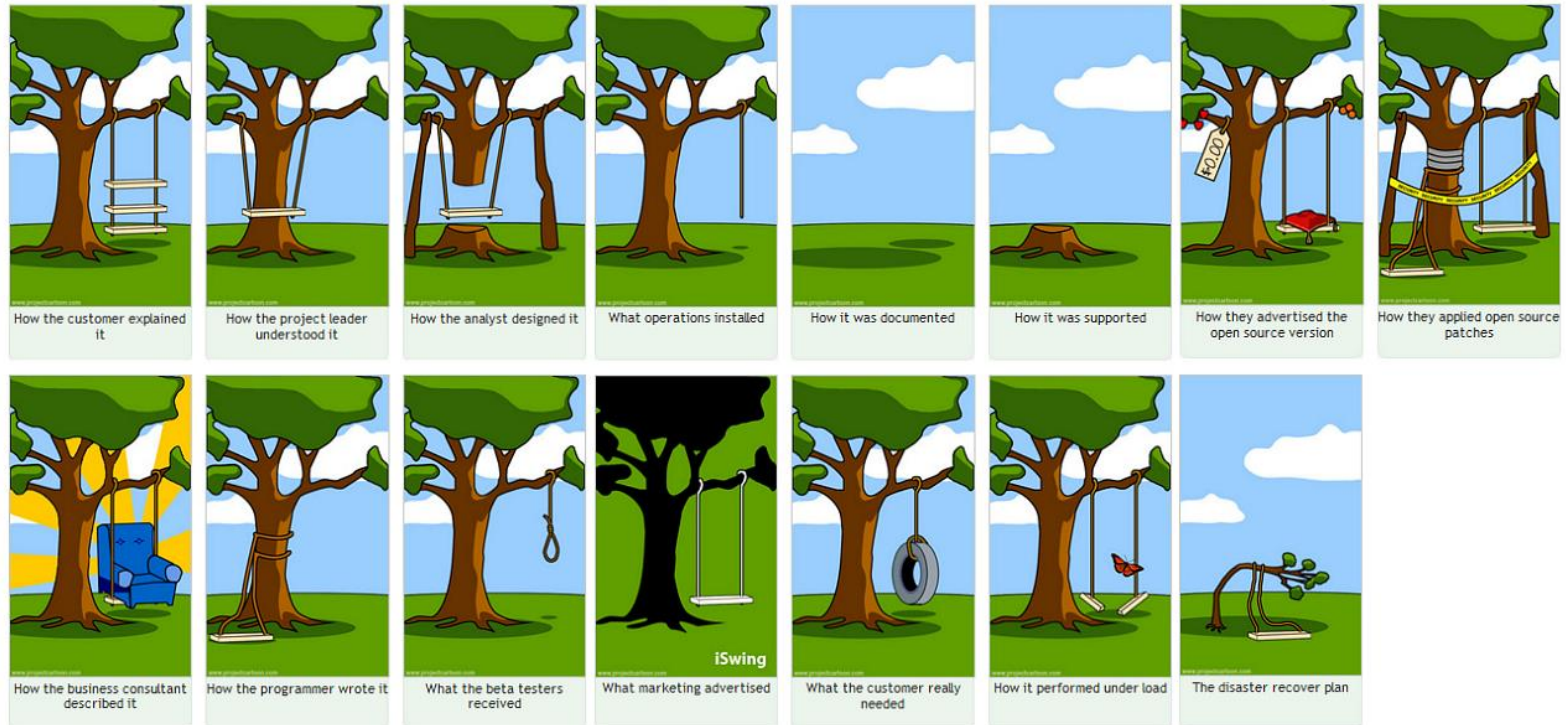


- CPE – Customer Premise Equipment
- ESN - Emergency Service Number
- ALI – Automatic Location Information
- ANI – Automatic Number Identification
- pANI - Psuedo ANI
- VoIP – Voice over IP
- MSC – Mobile Switching Center
- VPC – VoIP Positioning Center



## Quick Peek at Next Generation 9-1-1 Design

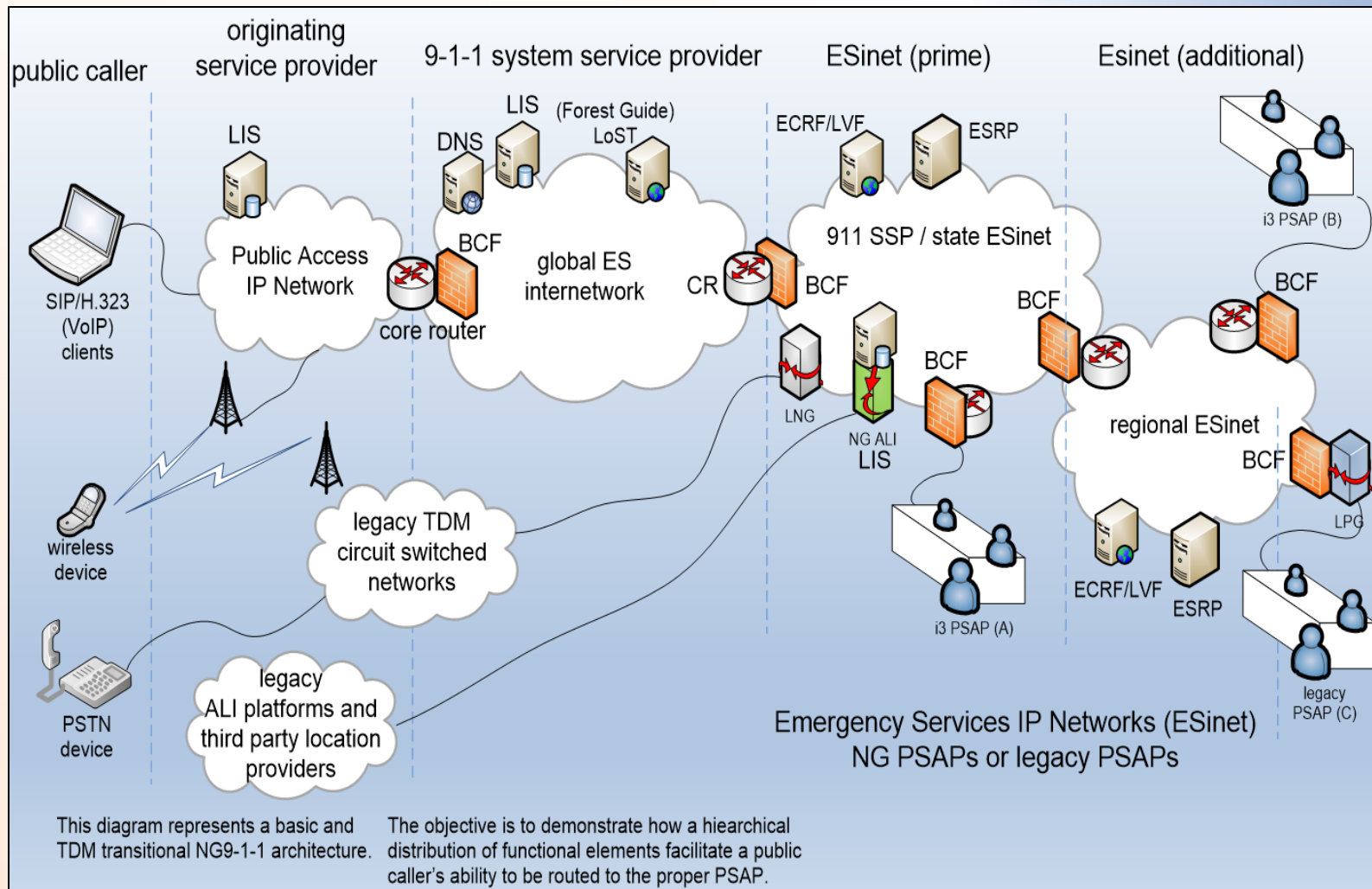
Product development from an IT failures perspective



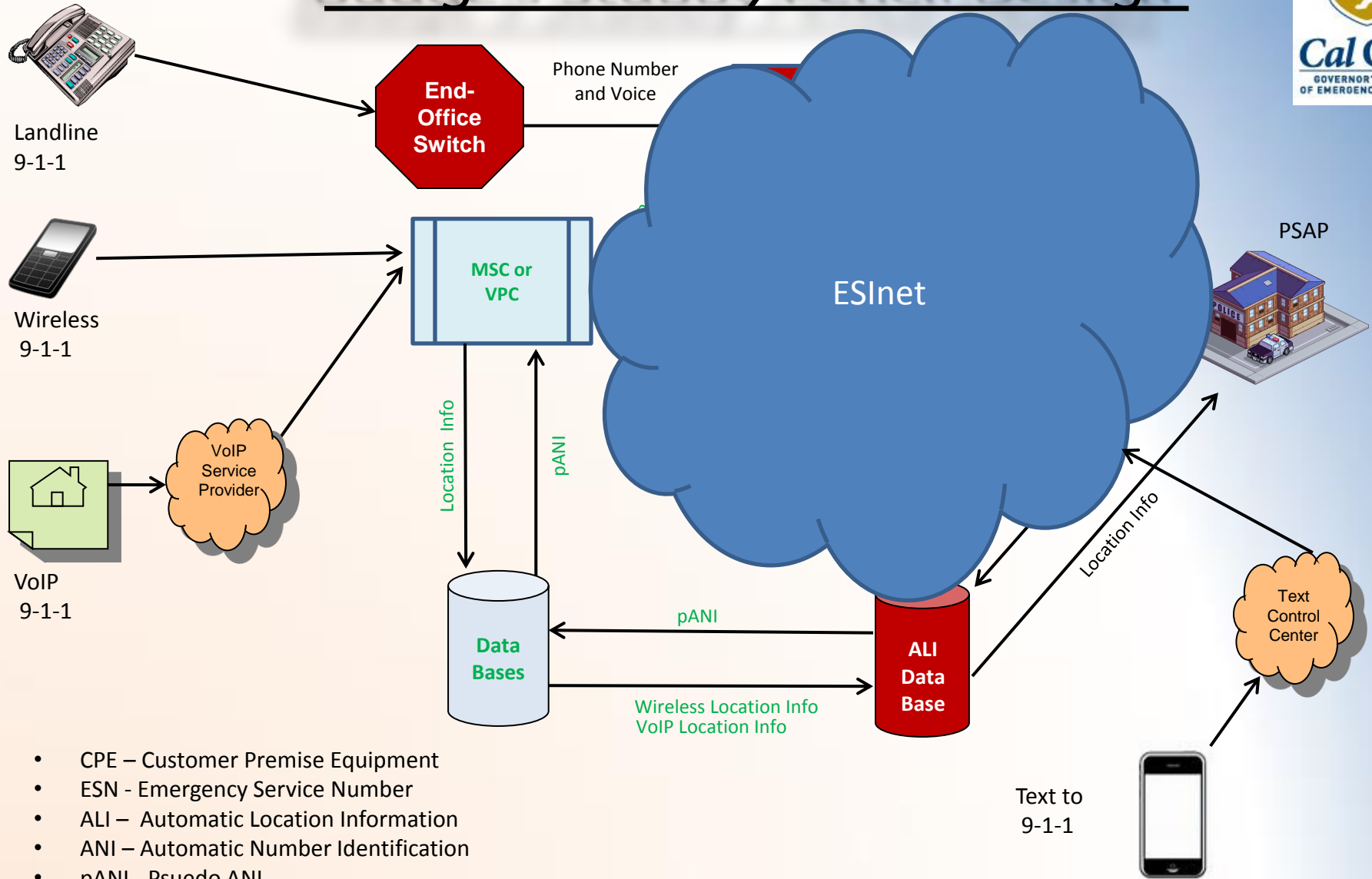




# Potential Next Generation 9-1-1 Architecture



# Budge's Stubby Pencil Design



- CPE – Customer Premise Equipment
- ESN - Emergency Service Number
- ALI – Automatic Location Information
- ANI – Automatic Number Identification
- pANI - Psuedo ANI
- VoIP – Voice over IP
- MSC – Mobile Switching Center
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# 9-1-1 Statistics

## California

- 45 Selective Routers
- 11 Local Access Transport Areas
- 443 PSAPs
- 28,507,534 9-1-1 calls

## For Comparison and Perspective Other Western APCO States

State	Number PSAPS	Number Calls
AK	43	404,266
AS	1	58,320
AZ	86	5,181,612
CO	99	6,542,771
HI	8	1,390,443
ID	48	662,938
MT	53	Not Available
NV	15	3,766,680
NM	47	1,499,049
OR	57	1,747,279
UT	36	1,054,068
WA	63	6,266,481
WY	Not Available	Not Available
<b>Totals</b>	<b>556</b>	<b>28,573,907</b>

# Quick Peek at Next Generation 9-1-1 Design for California



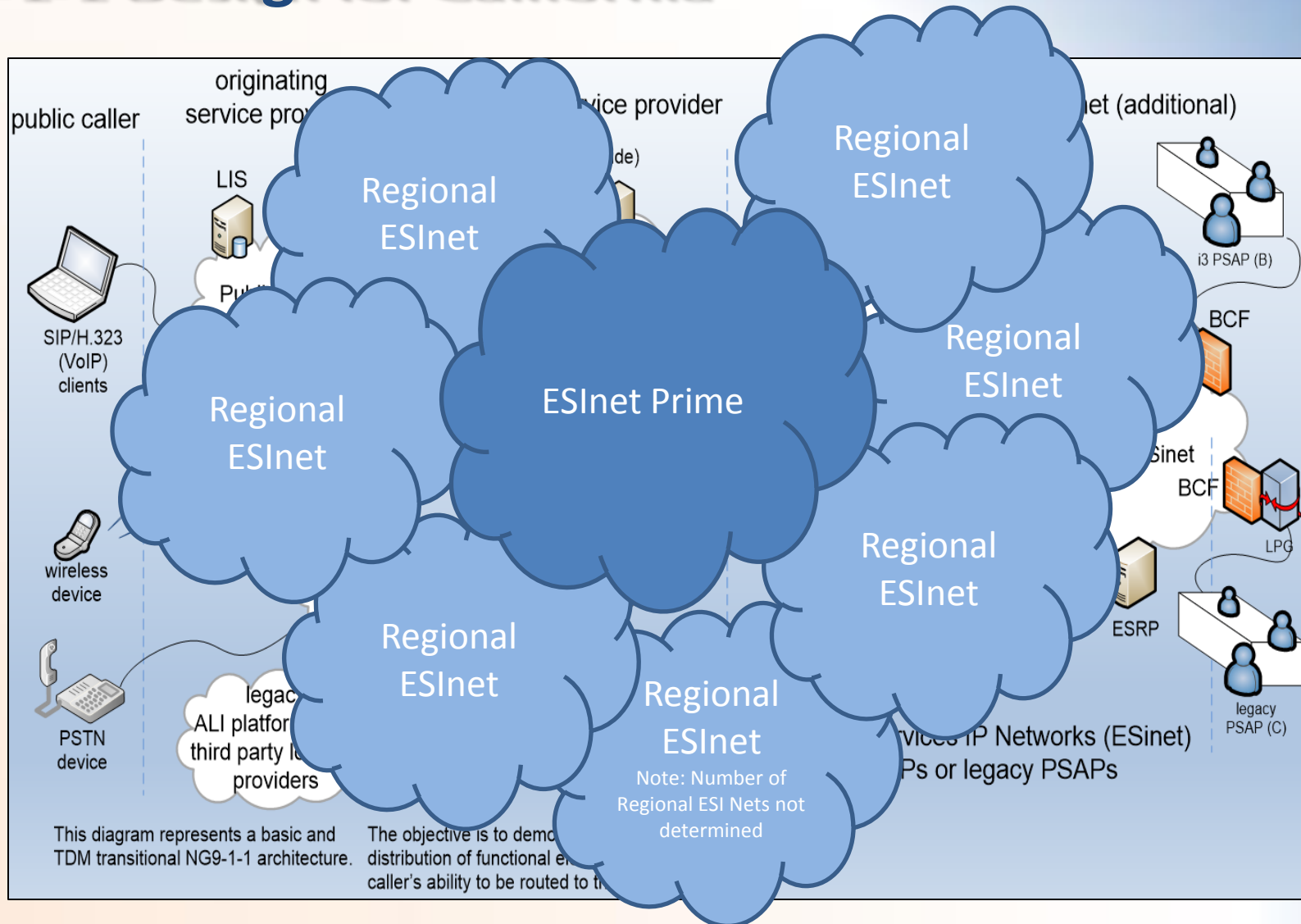
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- ❑ Multiple Regional ESInets are likely
- ❑ Critical Design Components
  - ❑ Open Architecture – Multi-Vendor
  - ❑ Security and system monitoring
  - ❑ Flexibility to accommodate new technology
  - ❑ No single point of failure
  - ❑ Dynamic routing
  - ❑ Driven by operational requirements of PSAP

# Potential Next Generation 9-1-1 Design for California



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## Multiple ESInet Implications



# Implications of Multiple ESInets

- ❑ NG 9-1-1 Interstate Playbook (Iowa, Minnesota, North Dakota, and South Dakota)
  - ❑ <https://www.911.gov/docs/NG911-Interstate-Playbook-FINAL-111516.pdf>
  - ❑ <http://leg.mt.gov/content/Committees/Interim/2015-2016/Energy-and-Telecommunications/Meetings/Sept-2015/next-generation-91-1-gis.pdf>
- ❑ ESInets are designed to accommodate dynamic routing between PSAPs
- ❑ ESInet traffic can dynamically route to another ESInet
  - ❑ How do we address call volume?
  - ❑ How can we throttle back the roll over?
  - ❑ How do I protect my ESInet?



# Planning Challenges and Procurement Options

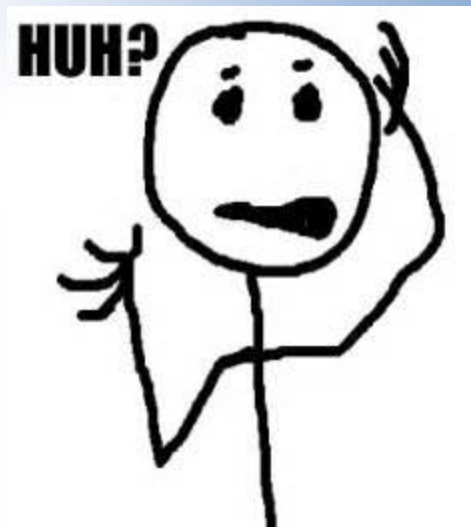






# Planning Challenges

- ❑ Information sharing
- ❑ Collaborative planning
- ❑ Keeping up with Technology
  - ❑ Location data from Wireless carriers
  - ❑ Aging selective routers
  - ❑ Network Security
  - ❑ Outage reporting and monitoring
- ❑ Baseline of PSAP CAMA trunk needs
- ❑ Patience and willingness to reach consensus
- ❑ Stakeholder dominating requirements
- ❑ Contract / Procurement Process





# Procurement Options

- ❑ Typical for Regional ESInet Procurement
  - ❑ ~24 months to develop contract
  - ❑ ~18 months to deploy ESInet
  - ❑ Typically a 5-7 year contract term
  - ❑ Imagine we have 6-12 ESInets – the implication is perpetual procurement
- ❑ Other Options
  - ❑ Contract Vehicle that allows services to transition
  - ❑ National Association of State Procurement Officials (NASPO – Formerly WSCA)
  - ❑ Tariff???
  - ❑ Other Contracts



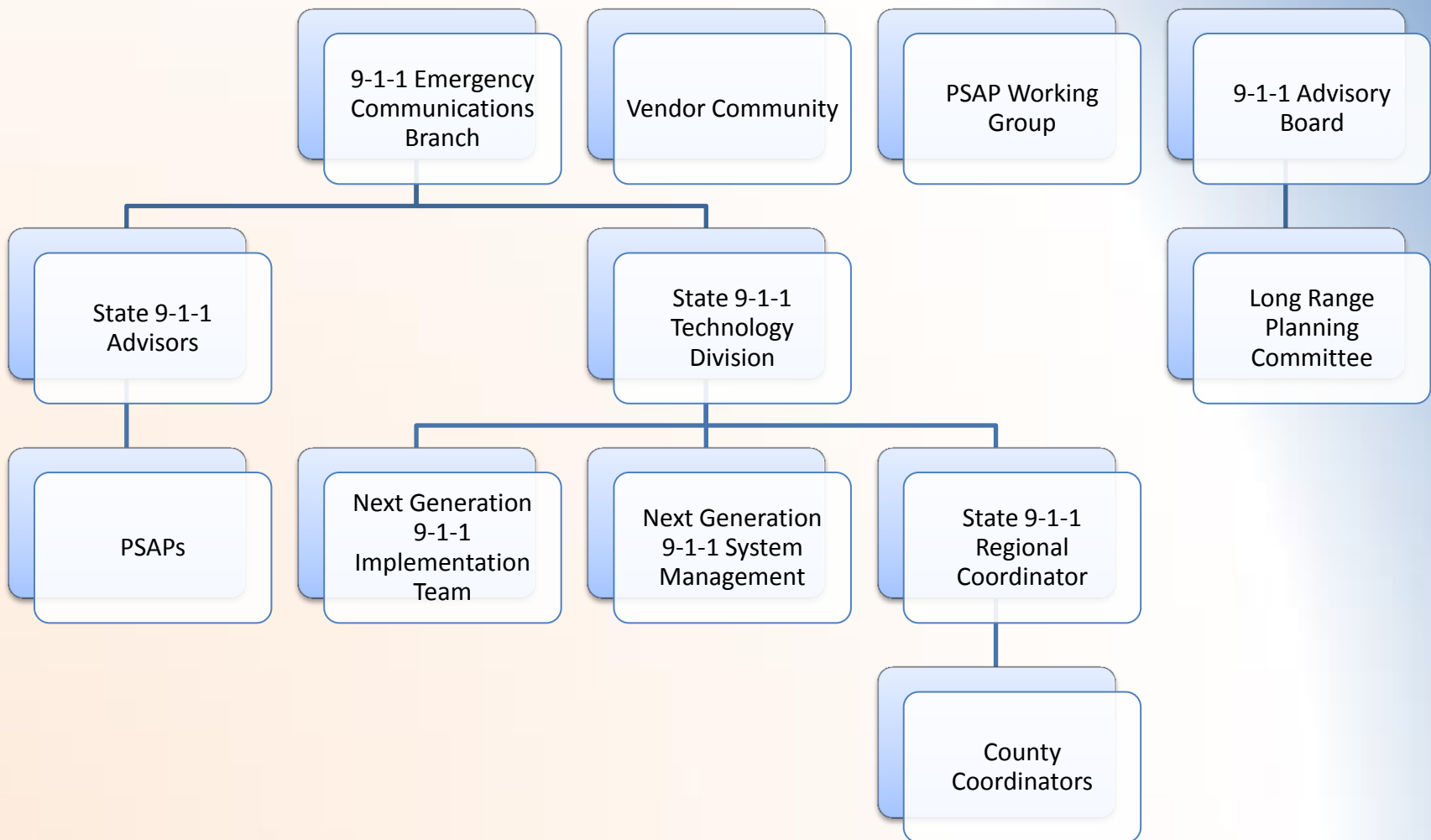


# State and PSAP Roles and Governance





# Next Generation 9-1-1 Governance Structure



# Aligning Roles

## State (Likely Roles)

- ☐ Develop regulations and requirements
- ☐ Coordinate ESInet interconnections
- ☐ Procure and monitor network(s)
- ☐ Ensure contracts support NG 9-1-1 ESInet functionality
- ☐ Coordinate training

## PSAP (Likely Roles)

- ☐ Participate in Working Groups
- ☐ Coordinate install and testing timelines
- ☐ Identify alternate answer needs (Dynamic Routing)
- ☐ Governance Needs: MOU, JPA.
- ☐ Call Handling (CPE)
- ☐ Voice concerns early



# System Monitoring





# System Monitoring

- ☐ Network monitoring 24x7x365
- ☐ Monitor each ESInet
- ☐ Monitor traffic between ESInets
- ☐ Event management and detection
- ☐ Outage management & detection
- ☐ ESInet vendors
  - ☐ Report monitoring data in real time
  - ☐ Must use format that can be consolidated
  - ☐ Outage and Denial of Service procedures
  - ☐ Intrusion detection and prevention
  - ☐ Escalation
  - ☐ Notification – 9-1-1 Branch and PSAP(s) affected



## Next Generation 9-1-1 Estimated Cost

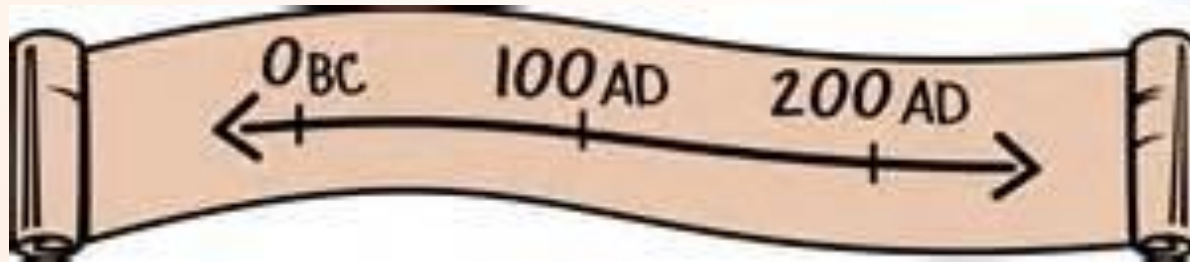
- Current rough order of magnitude costs

Deployment Year	NG9-1-1 Build Out Cost
1	\$58,256,000
2	\$69,872,000
3	\$81,488,000
4	\$93,104,000
5	\$104,720,000
<b>Total</b>	<b>\$407,440,000</b>

- Updated cost estimate May 2017



## Implementation Timeline





# Implementation Timeline for CA

- ☐ Transition Plan completed June 30, 2017
- ☐ First Regional ESInet
  - ☐ Northeast Project - Contract Award by April 2017
  - ☐ Pasadena RING – Contract Award by June 2017
- ☐ PSAP Discussions – Week of July 17<sup>th</sup> ??
  - ☐ Please contact 9-1-1 Branch if you are interested
    - ☐ Sacramento July 17<sup>th</sup>
    - ☐ Northern July 19<sup>th</sup>
    - ☐ Southern July 21<sup>st</sup>
- ☐ Vendor Discussions – Week of August 6<sup>th</sup>??
  - ☐ Please contact 9-1-1 Branch if you are interested
  - ☐ Goal is to schedule individual meetings with each vendor

Nationwide ESInet deployment by 2020...





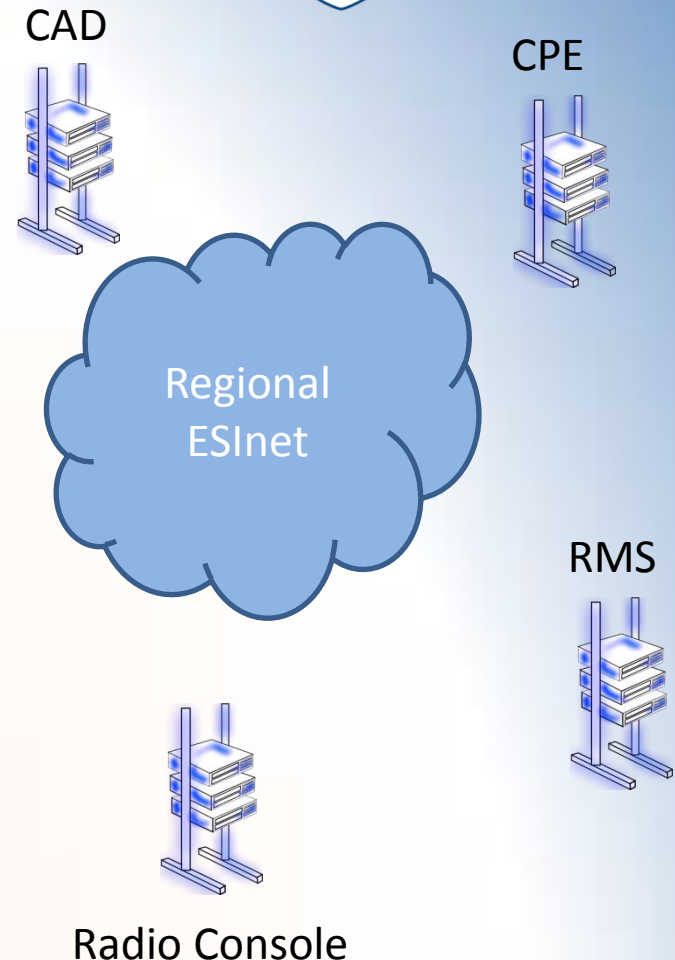
## PSAP Preparations





# PSAP Preparations

- ☐ True ESInet and Next Generation
  - ☐ Computer Aided Dispatch (CAD)
  - ☐ Call answering equipment (CPE)
  - ☐ Records Management System (RMS)
  - ☐ Radio Console
- ☐ Maintain Operational Needs
- ☐ Procedures Versus Technology
- ☐ Review
  - ☐ Number of Trunks
  - ☐ Number of Positions
  - ☐ How to ensure “local” look and feel
- ☐ Think Regionally
  - ☐ Shared CPE, CAD, RMS, Radio
  - ☐ Integrated GIS data





# Reality Check

- ☐ Collaboration and interaction is required
- ☐ There will be challenges
- ☐ The pace of the transition
- ☐ Message to PSAPs
  - ☐ Thank you
  - ☐ Partnership
  - ☐ We need your input to validate operational design considerations
- ☐ Message to Vendors
  - ☐ Thank you
  - ☐ Collaboration
  - ☐ Help us engineer, design, install and maintain the best 9-1-1 system possible
  - ☐ SLA's versus common sense



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## QUESTIONS

